

15-110 Recitation Week 10

Reminders

- HW5 due Monday 4/4 @ Noon
- How was Quiz 4?

Overview

- Internet Questions
- Security Review
- Meme Cipher Encryption
- External Modules: Pandas

Problems

QUICK INTERNET QUESTIONS

The internet is governed by a series of protocols, HTTPS is one of them. **T / F**

The net neutrality debate surrounds whether internet users should be able to create biased content and share it on public internet forums. **T / F**

IP addresses can be static or dynamic. **T / F**

All packets routed back to your computer from a website are guaranteed to be routed through the same wire. **T / F**

The internet is built such that if some components go down, it can continue operating with no interruption. **T / F**

Security Review

Describe the two main types of authentication.

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What makes RSA nearly impossible to break?

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Match the descriptions below to the corresponding types of security attack:

Every student at CMU goes to SIO at the same time to check their schedules

Answer: _____

One malicious student connects to a class wifi access point and looks at the packets for their roommate's andrew ID and password to send prank emails from their accounts

Answer: _____



Meme Cipher Encryption

Carnegie Mellon



surprised



I	
good	
cool	
grade	

Encrypt:

Carnegie Mellon is cool.

Decrypt:



A B C D (

A⁺ B⁺ C⁺ D⁺ (

What is the plaintext? _____

What is the ciphertext? _____

Is this a symmetric or asymmetric encryption algorithm? _____

How many keys are used? _____

What is the key? _____

What is the runtime to break this cipher? Keep in mind that an adversary knows each meme corresponds to a word, but they don't know which words are being used in the message. This means they would have to check each possibility in the dictionary. For this question, assume there are N words in the dictionary and 6 memes that are used.

External Modules: Pandas

Pandas is a Python package that provides efficient and flexible data structures for data storage and analysis.

Pandas Documentation: <https://pandas.pydata.org/docs/index.html>

Complete the problems listed in the starter code file. Make sure to pay attention to the hints in the comments!